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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/032,463	01/02/2002	Nobuaki Omata	O3020.0288/P288	6604

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EXAMINER

DOUGHERTY, THOMAS M

ART UNIT	PAPER NUMBER
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2834

DATE MAILED: 01/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/032,463

Applicant(s)

OMATA ET AL.

Examiner

Thomas M. Dougherty

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 December 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) 9-11 and 18-25 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 3-5, 7 and 8 is/are allowed.
- 6) ☒ Claim(s) 1, 2, 6 and 12-16 is/are rejected.
- 7) ☒ Claim(s) 17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

Claim 17 is objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend on another multiply dependent claim, which is claim 16. See MPEP § 608.01(n). Accordingly, the claim 17 has not been further treated on the merits. However were it to be treated on merits, it would appear to be rejectable on the same art as is applied in the case of claim 14 as described below.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 6 and 7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The description of the electrode in claim 6 as being on the inner circumferential surface and also being on only one end or the other is not understood. Such a structure was not found in the figures. The claim 7 description of the placement of the strain elements being formed along opposing end portions is not clearly understood.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 6 (as best understood), 12, 14 and 16 are rejected under 35

U.S.C. 102(a) as being anticipated by Hooley et al. (WO 01/47318 A2). Hooley et al. show (e.g. fig. 57) an actuator with an element (575) having a property of a piezoelectric inverse effect, wherein the element (575) is wound like a coil, and electrodes (see fig. 1 for exemplary view of construction, electrodes are 13, 14 and 15) are formed on an inner circumferential surface and an outer circumferential surface. Note that the intended use of the element as a strain element carries no patentable weight. It has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham 2* USPQ2d 1647 (1987).

Hooley et al. show (e.g. fig. 57) an actuator with an element (575) having a property of a piezoelectric inverse effect, wherein the element (575) is wound like a coil, an electrode (see fig. 1 for exemplary view of construction, electrodes are 13, 14 and 15) having a height lower than a height of the strain element is formed on an inner circumferential surface along an end portion of one of an upper end and a lower end, as that description is best understood; and an electrode having a height lower than the height of the strain element is formed on outer circumferential surface of the strain element along an opposite end portion of that inner circumferential surface. Again note that the intended use of the element as a strain element carries no patentable weight. It

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has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham 2* USPQ2d 1647 (1987).

Hooley shows both end portions of his element being spirally wound.

Hooley et al. show (e.g. fig. 57) an actuator with an element (575) having a property of a piezoelectric inverse effect, wherein the element (575) is wound like a coil, and electrodes (see fig. 1 for exemplary view of construction, electrodes are 13, 14 and 15) are formed on an inner circumferential surface and an outer circumferential surface. A dielectric is provided with the element. See p. 12, ll. 4-7 where it is noted that a polymeric or elastomeric material may be applied to the device, which material is dielectric. Note that the intended use of the element as a strain element carries no patentable weight. It has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham 2* USPQ2d 1647 (1987).

Claims 1, 6 (as best understood) and 12, are rejected under 35 U.S.C. 102(b) as being anticipated by Radice (US 4,638,207). Radice shows (fig. 1) an actuator (10) with an element (12) having a property of a piezoelectric inverse effect, wherein the element (12) is wound like a coil, and electrodes (see fig. 2 for exemplary view of construction, electrodes are 18 and 20) are formed on an inner circumferential surface and an outer circumferential surface. Note that the intended use of the element as a strain element

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carries no patentable weight. It has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham 2* USPQ2d 1647 (1987).

Radice shows (fig. 1) an actuator with an element (12) having a property of a piezoelectric inverse effect, wherein the element (12) is wound like a coil, an electrode (see fig. 2 for exemplary view of construction, electrodes are 18 and 20) having a height lower than a height of the strain element is formed on an inner circumferential surface along an end portion of one of an upper end and a lower end, as that description is best understood; and an electrode having a height lower than the height of the strain element is formed on outer circumferential surface of the strain element along an opposite end portion of that inner circumferential surface. Again note that the intended use of the element as a strain element carries no patentable weight. It has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham 2* USPQ2d 1647 (1987).

Radice shows both end portions of his element being spirally wound.

Claims 1, 2, 6 (as best understood), 12 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Kolm et al. (US 4,435,667). Kolm et al. show (figs. 1 and 3) an actuator (12) with an element (32a, 32b) having a property of a piezoelectric inverse effect, wherein the element (32a, 32b) is wound like a coil, and

electrodes (34a, 34b) are formed on an inner circumferential surface and an outer circumferential surface. Note that the intended use of the element as a strain element carries no patentable weight. It has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham 2* USPQ2d 1647 (1987).

Kolm's actuator includes a metal coil (30a) wound like a coil; the element (32a, 32b) is formed on at least one of an inner circumferential surface and an outer circumferential surface of the metal coil (30a); and an electrode (34a, 34b) is formed on a surface of the element. Note that the intended use of the element as a strain element carries no patentable weight. It has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham 2* USPQ2d 1647 (1987).

Kolm et al. show (figs. 1 and 3) an actuator (12) with an element (32) having a property of a piezoelectric inverse effect, wherein the element (32) is wound like a coil, an electrode (34a, 34b) having a height lower than a height of the element is formed on an inner circumferential surface along an end portion of one of an upper end and a lower end, as that description is best understood; and an electrode having a height lower than the height of the strain element is formed on outer circumferential surface of the strain element along an opposite end portion of that inner circumferential surface. Again note that the intended use of the element as a strain element carries no

patentable weight. It has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham 2* USPQ2d 1647 (1987).

Kolm shows both end portions of his element being spirally wound.

Claims 1, 2, 6 (as best understood), 12 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Hyodo et al. (JP6-22396). Hyodo et al. show (figs. 1-3 and 6) an actuator (10) with an element (1) having a property of a piezoelectric inverse effect, wherein the element (1) is wound like a coil, and electrodes (2a, 2b, 4a, 4b) are formed on an inner circumferential surface and an outer circumferential surface. Note that the intended use of the element as a strain element carries no patentable weight. It has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham 2* USPQ2d 1647 (1987).

Hyodo's actuator includes a metal coil (3) wound like a coil; the element (1) is formed on at least one of an inner circumferential surface and an outer circumferential surface of the metal coil (3); and an electrode (2a, 2b, 4a, 4b) is formed on a surface of the element. Note that the intended use of the element as a strain element carries no patentable weight. It has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed

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apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham 2* USPQ2d 1647 (1987).

Hyodo et al. show (figs. 1-3 and 6) an actuator (10) with an element (a) having a property of a piezoelectric inverse effect, wherein the element (a) is wound like a coil, an electrode (2a, 2b, 4a, 4b) having a height lower than a height of the element is formed on an inner circumferential surface along an end portion of one of an upper end and a lower end, as that description is best understood; and an electrode having a height lower than the height of the strain element is formed on outer circumferential surface of the strain element along an opposite end portion of that inner circumferential surface. Again note that the intended use of the element as a strain element carries no patentable weight. It has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham 2* USPQ2d 1647 (1987).

Hyodo et al. show both end portions of his element being spirally wound.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kolm et al. (US 4,435,667) in view of Hooley et al. (WO 01/47318 A2). Given the invention of Kolm et al. as noted above, Kolm et al. do not show a dielectric in parallel with the element. Given the invention of Hooley et al. as noted above, Hooley et al. do not show a metal coil. It would have been obvious to one having ordinary skill in the art to add a dielectric in parallel with the element of Kolm et al. such as is taught by Hooley et al. in Kolm's et al. device, in order to provide a protective surface for the device as Hooley et al. note.

Allowable Subject Matter

Claims 3-5, 7 and 8 are allowed.

The following is an examiner's statement of reasons for allowance: The prior art fails to show or fairly suggest the thickness dimension requirements of the claimed elemental parts of the invention. Additionally, the electrode configuration wherein electrodes are on opposing sides of the coil and neither electrode covers the entire surface on which it resides, while it is placed on a linear end surface opposite to the surface of the electrode on the opposing side, is not shown nor suggested by the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

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Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Additional prior art documents cited generally read on at least aspects of the claims and fairly completely on the most broadly descriptive claims.

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January 23, 2003

Thomas M. Dougherty
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